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Mark S. Honeyman

Iowa State University, honeyman@iastate.edu

John F. Patience

Iowa State University, jfp@iastate.edu

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Recommended Citation

Honeyman, Mark S. and Patience, John F., "Effects of Bedding on Pig Performance" (2012). *Iowa State Research Farm Progress Reports*. 134.

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Effects of Bedding on Pig Performance

Abstract

More pigs are being produced in bedded systems such as hoop barns due to the increase in demand for niche pork. Most of the current swine nutrition information has been generated in confinement settings without bedding. As omnivores, pigs ingest some bedding. There are questions about the effects of the ingested bedding on growth and feed utilization by the modern market pig. More knowledge in this area will allow for more accurate feed formulation in bedded systems.

Keywords

RFR A1182, Animal Science

Disciplines

Agriculture | Animal Sciences

Effects of Bedding on Pig Performance

RFR-A1182

Mark Honeyman, professor
John Patience, professor
Department of Animal Science

Introduction

More pigs are being produced in bedded systems such as hoop barns due to the increase in demand for niche pork. Most of the current swine nutrition information has been generated in confinement settings without bedding. As omnivores, pigs ingest some bedding. There are questions about the effects of the ingested bedding on growth and feed utilization by the modern market pig. More knowledge in this area will allow for more accurate feed formulation in bedded systems.

The objectives of the study were to determine the effects of bedding on finishing pigs in bedded hoop barns by: 1) conducting digestibility trials using indigestible marker in the feed, and 2) conducting a growth performance study with pigs with and without bedding in hoop barns. The two activities were imbedded in single trials performed four times—in the summer and fall 2010 and again in the summer and fall 2011. The first objective is not addressed in this report.

Materials and Methods

The trials were conducted during summer 2010 and 2011 at the ISU Western Research Farm, Castana, IA in three mini-hoop barns each with two pens. Each hoop had one bedded and one non-bedded pen of pigs. Cornstalks were used as bedding. Each pen had a self-feeder with one feeder space and an automatic waterer. The gating between the pens was altered to allow no bedding to pass through. All pigs on the trials were barrows.

There were two trials during summer 2010 and there two trials in summer 2011. There were five pigs per pen starting at approximately 150 lb and fed for 48 or 49 days. Thus when the experiment was complete, there were four trials of six pens or 24 pens total with five pigs each or 120 pigs total with 12 pens of bedding and 12 pens without bedding. A pen of five pigs is the experimental unit. One pig died unexpectedly in the bedded pens.

The primary treatment was bedding. There were two dietary phases fed. Phase one for 21 days and phase two for 28 days. All pigs in all pens received the same diets. At the end of the trial all pigs were weighed and scanned with ultrasound to determine backfat thickness and loin muscle area.

Growth (ADG), feed intake (ADFI), backfat thickness, and loin muscle area (LMA) were collected. Feed efficiency (F/G), fat free lean (FFL) percentage, and gain and efficiency were calculated.

Results and Discussion

Results of the four trials are shown in Table 1. Barrows weighing approximately 150 lb were fed for 48.3 days with and without bedding. Statistical analysis had not been conducted; however, the growth feed intake, feed efficiency, backfat thickness, and loin muscle area were similar for the barrows with and without bedding during summer months.

Acknowledgements

The authors acknowledge the assistance of Wayne Rouse, ISU Western Research Farm and Arlie Penner, ISU Department of Animal Science for assistance with the project.

Table 1. Pig performance in hoop barns with and without bedding.

	Bedding	No bedding
Pigs, hd	59	60
Pens, no.	12	12
Days on test	48.3	48.3
Start weight, lb	151.3	151.4
End weight, lb	271.0	276.8
Gain, lb	119.7	125.4
ADFI, lb/d ^a	7.71	8.17
ADG, lb/d ^b	2.48	2.60
F/G, lb feed/lb gain ^c	3.11	3.14
Backfat, in.	0.91	0.93
LMA, sq. in. ^d	7.22	7.17
Adj. backfat, in. ^e	0.83	0.83
Adj. LMA, sq. in. ^f	6.87	6.72
Fat free lean, %	51.2	50.6
Fat free lean gain, lb/d	0.89	0.91
Eff. of lean gain, lb feed/lb gain	8.69	8.98

^aADFI = Average daily feed intake.^bADG = Average daily gain.^cF/G = Feed per gain.^dLMA = Loin muscle area.^eAdj. backfat = Backfat thickness adjusted to 250 lb.^fAdj. LMA = Loin muscle area adjusted to 250 lb.